

U.S. Patent Application Serial No. 10/657,192
Response filed December 12, 2005
Reply to OA dated September 12, 2005

REMARKS

Claim 14 has been canceled without prejudice or disclaimer.

Claims 1, 2, 5, 9 and 10 have been amended in order to more particularly point out, and distinctly claim the subject matter to which the applicants regard as their invention. The applicants respectfully submit that no new matter has been added. It is believed that this Response is fully responsive to the Office Action dated September 12, 2005.

Claims 1 - 13 and 15 - 18 are pending in this application.

Claims 1 - 12 and 14 stand rejected under 35 USC §112, first paragraph, because, according to the Examiner, the subject matters set forth in claims 1, 2, 5, 9 and 14 are not supported in the applicants' specification. The applicants respectfully request reconsideration of this rejection.

The applicants have amended claims 1, 2, 5 and 9 in order to delete the subject matter added in these claims in their Amendment of July 26, 2005. Thus, the outstanding rejection under 35 USC §112, first paragraph, is moot.

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Accordingly, the withdrawal of the outstanding rejection under 35 USC §112, first paragraph, is in order, and is therefore respectfully solicited.

The Examiner's objections to the language of claims 5 and 10, as set forth in item 14, page 5 of the outstanding Action, have been corrected. Thus, the withdrawal of the outstanding objections to the language of claims 5 and 10 is in order, and is therefore respectfully solicited.

As to the merits of this case, the applicants thank the Examiner for allowing claim 13, as noted in item 20, page 6 of the outstanding Action.

However, as to the remaining claims, the Examiner maintains his reliance on Collins (U.S. Patent No. 6,252,354) in rejecting claims 1 - 10 under 35 USC §102(b) based on Collins. The applicants respectfully request reconsideration of this rejection.

In response to the applicants' July 26, 2005 Amendment, the Examiner has taken the following positions:

[1] Applicant has argued that the matching box claimed is different from that in Collins. Specifically, Applicant argues that the instant invention is "connected in series". There is no claim to being connected in series in the claims. Therefore, the argument is not germane.

[2] Applicant then argues that the instant invention includes a control circuit that specifically measures the current flowing through the coil. Again, there is no such limitation in the claims and thus, the argument is not germane.

[3] Applicant then argues that upon detection of the disappearance of the plasma, the variable inductance element is increased. Again, there is no such limitation in the claims and thus, the argument is not germane.^{1/}

In response to the above-cited Examiner's comments, the applicants' have amended each of independent claims 1, 2, 5 and 9. A significant structural arrangement of the applicants' claimed matching box, as now set forth in claim 1, includes the claimed impedance of the main winding being controlled based on a magnitude of direct current flowing through the control winding, when the disappearance of plasma is detected, the voltage outputted from said matching box is increased by changing said current flowing through said control winding. As to independent claim 2, a significant structural arrangement now set forth in this claim includes the claimed first main winding being connected in series between the input terminal and the high voltage side output terminal.

As to independent claim 5, a significant structural arrangement now recited therein includes the claimed variable inductance element, the inductance of which is increased upon detection of the disappearance of plasma. As to independent claim 9, a significant structural arrangement now includes the claimed variable inductance element being connected between the RF source and a ground side output terminal, the inductance of the variable inductance element being increased upon

^{1/} Please see, items 23-25, page 6 of the outstanding Action.

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detection of the disappearance of plasma.

In support thereof, the applicants refer the Examiner to their arguments in distinguishing their claimed invention over the teachings of Collins, as set forth in the Remarks portion of their Amendment, filed on July 26, 2005, with the following exception. In the second paragraph on page 16 of the July 26, 2005 Amendment, the applicants noted that in their matching box, “a first control winding” is connected in series between an RF source and a coil. This statement is hereby corrected so as to read that in the applicants’ matching box, “a first main winding” of “a first variable inductance element” is connected in series between an RF source and a coil. In Collins’ matching box, a capacitor of “pi-network” is simply replaced with a variable capacitor or a parallel connected circuit composed of a fixed capacitor and a variable inductor, and the series inductor 190 is not variable. In other words, the matching box according to the applicants’ instant claimed invention and the matching box described in Collins are different in point of connected variable inductance elements. (Also, the applicants refer the Examiner to the attached sketch in which Fig. a in the attached sheet is a schematic circuit diagram simplified by omitting a capacitor from a matching box of the present invention. Fig. b in the attached sheet is a simplified schematic circuit diagram of a matching box according to Collins.)

In view of the above, not all of the claimed elements, as now set forth in each of independent claim 1, independent claim 2 (and claims 3, 4 and 8 which depend therefrom), independent claim

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5 (and claims 6 and 7 which depend therefrom), and 9 (and claim 10 which depends therefrom), are found in exactly the same situation and united in the same way to perform the identical function in Collins' device. Thus, there can be no anticipation of the applicants' claimed invention based on the teachings of Collins.

Accordingly, the withdrawal of the outstanding anticipation rejection under 35 USC §102(b) based on Collins (U.S. Patent No. 6,252,354) is in order, and is therefore respectfully solicited.

In view of the aforementioned amendments and accompanying remarks, claims, as amended, are in condition for allowance, which action, at an early date, is requested.

If, for any reason, it is felt that this application is not now in condition for allowance, the Examiner is requested to contact the applicants undersigned attorney at the telephone number indicated below to arrange for an interview to expedite the disposition of this case.

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In the event that this paper is not timely filed, the applicants respectfully petition for an appropriate extension of time. Please charge any fees for such an extension of time and any other fees which may be due with respect to this paper, to Deposit Account No. 01-2340.

Respectfully submitted,

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PATENT TRADEMARK OFFICE

Attachment: Sketch